# Everything you need to know about flower tea microwave dryer sterilization machine in 2024

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### Introduction

The flower tea microwave dryer sterilization machine represents a significant advancement in processing technology, particularly for the tea industry. This machine utilizes microwave energy efficiently dry and sterilize flower teas, ensuring the preservation of their delicate flavors and nutritional properties. By integrating drying and sterilization in one process, it enhances produce safety and extends shelf life. The use of microwaves allows for rapid processing, reducing proteimes and energy consumption compared to traditional methods. In 2024, this innovative tech is crucial for manufacturers seeking to produce high-quality, safe, and aromatic flower teas.



#### Working Principle of Flower Tea Microwave Dryer

#### **Sterilization Machine**

The flower tea microwave dryer sterilization machine utilizes innovative microwave technolo efficiently dry and sterilize flower tea leaves. This advanced piece of equipment operates on t principle of selective heating, where microwaves penetrate the material and excite water mole within it. As a result, the water molecules vibrate rapidly, generating heat and causing the mo within the flower tea leaves to evaporate.

The microwave energy is absorbed selectively by the moisture content in the tea leaves, leading uniform heating throughout the material. This ensures that the drying process is rapid and compreserving the natural color, aroma, and flavor of the flower tea.

Moreover, the microwave dryer sterilization machine is equipped with specialized sensors and systems that monitor and adjust various parameters such as temperature, humidity, and microv power. These controls allow for precise regulation of the drying process, ensuring optimal res while minimizing energy consumption.

In terms of sterilization, the microwave technology effectively kills bacteria, molds, and other microorganisms present in the flower tea leaves. The high temperature generated by the micro destroys the cellular structure of these pathogens, rendering them inactive and ensuring the sa hygiene of the final product.

Overall, the working principle of the flower tea microwave dryer sterilization machine combine benefits of rapid drying and efficient sterilization, making it an indispensable tool for the flow industry in 2024. Its ability to preserve the quality and safety of flower tea products while imp productivity underscores its importance in modern food processing operations.

#### Continuous Microwave Equipment Working Process



Drying working area

#### Advantages of scented tea microwave drying and

#### sterilizing machine

Advantage	Description
Efficient Drying	Rapid and uniform drying process ensures consistent moisture r without damaging the tea leaves.
Effective Sterilization	Utilizes microwave technology to eliminate bacteria, mold, and pathogens, ensuring product safety.
Preservation of Aroma and Flavor	Maintains the natural aroma and flavor of the flower tea by prevover-drying and oxidation.
Energy Efficiency	Lower energy consumption compared to traditional drying meth reducing operational costs.
Short Processing Time	Significantly reduces the drying and sterilization time, increasing overall productivity.
Uniform Heating	Ensures even heat distribution, preventing hotspots and ensuring consistent quality.
Automation and Control	Advanced control systems for precise temperature and humidity management, ensuring optimal processing conditions.
Scalability	Suitable for both small-scale and large-scale production, offerin flexibility in processing capacity.
Environmental Benefits	Reduces carbon footprint due to lower energy usage and shorter processing times.

#### Improved Shelf Life

Enhances the shelf life of the flower tea by effectively removing moisture and sterilizing the product.



#### **Technical specifications**

Technical Parameters Of Continuous Microwave Dryer Industrial Microwave Dry Machine

Model	Size LWH(Can be customized according to the customer's requirements)	Output power	Dewaterability	Sterilization capacity	Bakin Roast capac (Depe on dif raw matei
LY- 10KW	5000mm825mm1750mm	?10KW	10KG/Hour	100KG/Hour	30- 50KG/
LY- 20KW	8000mm825mm1750mm	?20KW	20KG/Hour	200KG/Hour	60- 100KC
LY- 30KW	8500mm1160mm1750mm	?30KW	30KG/Hour	300KG/Hour	90-150 KG/He

10000mm1160mm1750mm	?40KW	40KG/Hour	40KG/Hour	120- 200KC		
12500mm1160mm1750mm	?50KW	50KG/Hour	500KG/Hour	150- 250KC		
13500mm1450mm1750mm	?60KW	60KG/Hour	600KG/Hour	180- 300K0		
13500mm1500mm1750mm	?70KW	70KG/Hour	700KG/Hour	210- 350KC		
13500mm1650mm1750mm	?80KW	80KG/Hour	800KG/Hour	240- 400K0		
16800mm1650mm1750mm	?100KW	100KG/Hour	1000KG/Hour	300- 500KC		
22400mm1850mm1750mm	?150KW	150KG/Hour	1500KG/Hour	450- 750K0		
27000mm1850mm1750mm	?250KW	250KG/Hour	2500KG/Hour	750- 1250/I		
32000mm1850mm1750mm	?300KW	300KG/Hour	3000KG/Hour	900- 1500K		
Power Supply		380V±10% 50Hz±1% Three-Phase Five-Wire				
Microwave Output Frequency		2450±50Mhz				
Microwave Input Apparent Power		?168Kva				
Microwave Output Power		?120Kw				
Microwave Power Adjustment Range		0-30Kw(Adjustable)				
Ambient Temperature		-5-40°C				
Relative Humidity		?80%, Surrounding Environment:No Corrosive Gas, Conductive Dust And Explosive Gas				
Transmission Speed		0-10m/Min(Adjustable)				
	10000mm1160mm1750mm 12500mm1160mm1750mm 13500mm1450mm1750mm 13500mm1650mm1750mm 16800mm1650mm1750mm 22400mm1850mm1750mm 27000mm1850mm1750mm 32000mm1850mm1750mm 32000mm1850mm1750mm upply ve Output Frequency ve Input Apparent Power ve Output Frequency ve Input Apparent Power ve Output Frequency ve Input Apparent Range Temperature Humidity	10000mm1160mm1750mm?40KW12500mm1160mm1750mm?50KW13500mm1450mm1750mm?60KW13500mm1500mm1750mm?70KW13500mm1650mm1750mm?80KW16800mm1650mm1750mm?100KW22400mm1850mm1750mm?150KW27000mm1850mm1750mm?250KW32000mm1850mm1750mm?300KWupply380V±100ve Output Frequency2450±50Nve Input Apparent Power?120Kwve Output Power?120Kwve Output Power?120Kwve Output Power?120Kwve Dower Adjustment Range0-30Kw(ATemperature-5-40°CHumidity?80%, Sur Conductivesion Speed0-10m/Mi	10000mm1160mm1750mm?40KW40KG/Hour12500mm1160mm1750mm?50KW50KG/Hour13500mm1450mm1750mm?60KW60KG/Hour13500mm1500mm1750mm?70KW70KG/Hour13500mm1650mm1750mm?80KW80KG/Hour16800mm1650mm1750mm?100KW100KG/Hour22400mm1850mm1750mm?150KW150KG/Hour27000mm1850mm1750mm?250KW250KG/Hour32000mm1850mm1750mm?300KW300KG/Hour1pply $380V\pm10^{\circ}$ 50Hz±1% Threeve Output Frequency $2450\pm50$ Hzve Input Apparent Power?168Kvave Output Power?120Kwve Output Power $9120$ Kwve Power Adjustment Range $0-30$ Kw(Ajustable)Temperature $-5-40^{\circ}$ CHumidity?80%, Surrounding Environd Conductive Dust And Explosion Speed $0-10m/Min(Adjustable)$	10000mm1160mm1750mm?40KW40KG/Hour40KG/Hour12500mm1160mm1750mm?50KW50KG/Hour500KG/Hour13500mm1450mm1750mm?60KW60KG/Hour600KG/Hour13500mm1500mm1750mm?70KW70KG/Hour700KG/Hour13500mm1650mm1750mm?80KW80KG/Hour800KG/Hour16800mm1650mm1750mm?100KW100KG/Hour1000KG/Hour22400mm1850mm1750mm?150KW150KG/Hour1500KG/Hour27000mm1850mm1750mm?250KW250KG/Hour2500KG/Hour32000mm1850mm1750mm?300KW300KG/Hour3000KG/Hour19ply380V±10*50Hz±1% Three-Thase Five-Wir ve Output Frequency2450±50/Hzve Output Power?168Kva50Hz±1% Three-Thase Five-Wir ve Power Adjustment Range0-30Kw(Ajustable)remperature-5-40°C580%, Sur-ounding Environ-ent:No Corrossi Conductive Dust And Explosive Gassion Speed0-10m/Mir(Adjustable)500KG/Hour		



#### Key components of scented tea microwave drying and

### sterilizing machine

In understanding the intricacies of a flower tea microwave dryer sterilization machine, it's ess delve into its key components. These components collectively contribute to the efficiency and effectiveness of the machine in drying and sterilizing flower tea. Below are the key component such a machine:

1. Microwave Chamber:

- The microwave chamber is the central part of the machine where the flower tea is placed f drying and sterilization.

- It is designed to ensure uniform distribution of microwave energy to all parts of the tea, factorisistent drying and sterilization.

2. Conveyor Belt System:

- The conveyor belt system is responsible for transporting the flower tea through the microv chamber.

- It ensures a continuous flow of tea, optimizing the efficiency of the drying and sterilization process.

3. Microwave Generator:

- The microwave generator is the source of microwave energy used in the drying and steriliz process.

- It produces high-frequency electromagnetic waves that penetrate the flower tea, causing w molecules to vibrate and generate heat, thereby drying and sterilizing the tea.

4. Temperature and Moisture Sensors:

- These sensors are crucial for monitoring and controlling the temperature and moisture leve within the microwave chamber.

- They ensure that the drying and sterilization process occurs at the optimal conditions, prevover-drying or under-drying of the flower tea.

5. Control Panel:

- The control panel serves as the interface for operating the machine.

- It allows operators to set parameters such as temperature, moisture level, and processing ti providing flexibility and customization options.

6. Exhaust System:

- The exhaust system is responsible for removing excess moisture and gases from the micro chamber.

- It helps maintain the desired environment within the chamber and ensures the quality of th and sterilized flower tea.

7. Safety Features:

- Modern flower tea microwave dryer sterilization machines are equipped with various safet features to protect both the machine and operators.

- These may include emergency stop buttons, overheating protection, and automatic shutdov mechanisms in case of malfunction.



Types of Scented Tea Microwave Drying and Sterilizing

### Machines

1. Batch Microwave Dryers

Batch microwave dryers are suitable for small to medium-scale flower tea producers. They all the drying and sterilization of flower tea in discrete batches. These machines feature a chamber the flower tea is placed for processing. Batch microwave dryers offer flexibility in operation a relatively easy to maintain.

2. Continuous Microwave Dryers

Continuous microwave dryers are designed for large-scale flower tea production. They offer continuous processing of flower tea, allowing for high-volume production. These machines ty feature a conveyor belt system that moves the flower tea through the drying and sterilization chambers. Continuous microwave dryers are highly efficient and can significantly increase productivity.

3. Hybrid Microwave Dryers

Hybrid microwave dryers combine microwave technology with other drying methods, such as or infrared radiation. These machines offer the benefits of both technologies, allowing for fast more uniform drying of flower tea. Hybrid microwave dryers are versatile and can be customic meet specific processing requirements.

4. Tunnel Microwave Dryers

Tunnel microwave dryers are ideal for flower tea producers looking for automated and highthroughput processing. These machines feature a tunnel-like structure with a conveyor belt sy that transports the flower tea through the drying and sterilization chambers. Tunnel microwav offer precise control over temperature and moisture levels, ensuring consistent quality and saf the final product.

5. Vacuum Microwave Dryers

Vacuum microwave dryers are designed to operate under reduced pressure, allowing for lowe temperatures and faster processing times. These machines are particularly suitable for delicate teas that are sensitive to high temperatures. Vacuum microwave dryers help preserve the aron flavor, and nutritional value of the flower tea while ensuring effective sterilization.



### Technological Progress and Innovation of Scented Tea

## Microwave Drying and Sterilizing Machines

In 2024, the landscape of scented tea production has been significantly influenced by advance microwave drying and sterilization technology. The integration of innovative features into sce microwave dryer sterilization machines has revolutionized the way flower tea is processed an preserved.

One of the key areas of innovation lies in the precision and efficiency of the drying and sterili process. Modern machines are equipped with advanced control systems that allow for precise adjustment of parameters such as temperature, humidity, and microwave power. This ensures drying and effective sterilization of flower tea, preserving its aroma, flavor, and nutritional va Furthermore, the automation capabilities of these machines have been enhanced to streamline production process. Automatic loading and unloading systems minimize manual labor and recersisk of contamination. Meanwhile, real-time monitoring and feedback mechanisms enable oper monitor the progress of drying and sterilization remotely, optimizing efficiency and productive Another notable advancement is the development of energy-efficient designs. Scented tea mic dryer sterilization machines now utilize innovative heating and cooling technologies to minim energy consumption while maintaining high throughput. This not only reduces operating costs also contributes to sustainability efforts within the industry.

Moreover, manufacturers have focused on enhancing the versatility and adaptability of these machines. They are designed to accommodate a wide range of scented tea varieties, from deli

flower buds to robust herbal blends. Customizable settings and interchangeable components a producers to tailor the drying and sterilization process to suit specific tea types and quality requirements.

In conclusion, the technological progress and innovation in scented tea microwave drying and sterilizing machines have revolutionized the way flower tea is processed and preserved in 202 advanced features such as precision control, automation, energy efficiency, and versatility, the machines offer unprecedented levels of quality, efficiency, and sustainability in the production scented tea.



#### Precautions for Selection and Implementation of Scen

## Tea Microwave Drying and Sterilizing Machine

When considering the purchase and implementation of a flower tea microwave dryer sterilizate machine, there are several key factors to keep in mind to ensure optimal performance and result Below are some essential precautions to consider:

1. Technology Integration: Ensure that the machine integrates microwave technology effectiv both drying and sterilization processes. Microwave drying and sterilization offer numerous be including faster processing times and better preservation of tea quality compared to traditiona methods.

2. Customization Options: Look for a machine that offers customization options to suit the speneds of scented tea production. Different types of flower teas may require varying drying and sterilization parameters, so having the flexibility to adjust settings accordingly is crucial.

3. Quality and Safety Standards: Prioritize machines that adhere to stringent quality and safety standards. This includes compliance with regulatory requirements and certifications ensuring safety and hygiene.

4. Efficiency and Energy Consumption: Assess the machine's efficiency in terms of energy consumption and overall productivity. Opt for models that are energy-efficient to minimize op costs while maximizing throughput.

5. Ease of Operation and Maintenance: Choose a machine that is user-friendly and easy to ma Look for features such as intuitive controls, automated processes, and accessible maintenance components to streamline operations and minimize downtime.

6. Reliability and Durability: Invest in a machine from reputable manufacturers known for the reliability and durability. A robust and well-built machine will provide consistent performanc time, reducing the risk of breakdowns and costly repairs.

7. Training and Support: Ensure that adequate training and support are provided by the manufor supplier. Proper training for operators and ongoing technical support can help maximize the machine's effectiveness and lifespan.

8. Cost Considerations: While price is undoubtedly a factor, prioritize value over cost alone. On the long-term benefits and return on investment offered by a high-quality machine that meets specific requirements.

By taking these precautions into account during the selection and implementation process, yo ensure the successful integration of a flower tea microwave dryer sterilization machine into ye production facility, resulting in high-quality, safe, and flavorful scented tea products for const



# Challenges and Limitations of Scented Tea Microwave

# Drying and Sterilizing Machines

Microwave drying and sterilization machines have revolutionized the processing of scented te offering efficiency and speed in the preservation of flavor and quality. However, despite their numerous advantages, these machines also face certain challenges and limitations that must be acknowledged and addressed for optimal performance.

#### 1. Uniformity of Drying and Sterilization

One of the primary challenges faced by flower tea microwave dryer sterilization machines is a uniformity in the drying and sterilization process. Microwave energy tends to penetrate uneve leading to variations in moisture content and sterilization levels across the tea leaves. This can in inconsistent quality and flavor in the final product.

2. Control of Temperature and Moisture Levels

Maintaining precise control over temperature and moisture levels is essential for preserving the delicate flavors and aromas of scented teas. However, achieving and maintaining the ideal control of the scented teas are scented teas.

can be challenging, particularly in large-scale production settings. Fluctuations in temperature moisture can impact the quality of the tea and lead to suboptimal results.

3. Preservation of Nutritional Value

Another limitation of microwave drying and sterilization machines is their potential impact or nutritional value of scented teas. While microwave technology offers rapid processing times, also lead to the degradation of certain nutrients and bioactive compounds in the tea leaves. Ba the need for efficient processing with the preservation of nutritional integrity presents a signif challenge for manufacturers.

4. Energy Efficiency

Microwave drying and sterilization machines require significant energy inputs to operate, rais concerns about energy efficiency and environmental sustainability. While advancements have made to improve energy efficiency, optimizing the balance between energy consumption and processing speed remains a challenge for manufacturers.

5. Equipment Maintenance and Calibration

Ensuring the proper maintenance and calibration of microwave drying and sterilization machi essential for consistent and reliable performance. However, maintaining these machines can b complex and labor-intensive, requiring specialized training and expertise. Failure to adequate maintain and calibrate the equipment can lead to decreased efficiency and compromised produquality.



#### References

The following are five authoritative foreign literature websites in the field of industrial microv 1. IEEE Xplore Digital Library

Website: [https://ieeexplore.ieee.org/]
2.ScienceDirect
Website: [https://www.sciencedirect.com/]
3. SpringerLink
Website: [https://link.springer.com/]
4. Wiley Online Library
Website: [https://onlinelibrary.wiley.com/]
5. PubMed

Website: [https://pubmed.ncbi.nlm.nih.gov/https://pubmed.ncbi.nlm.nih.gov/]